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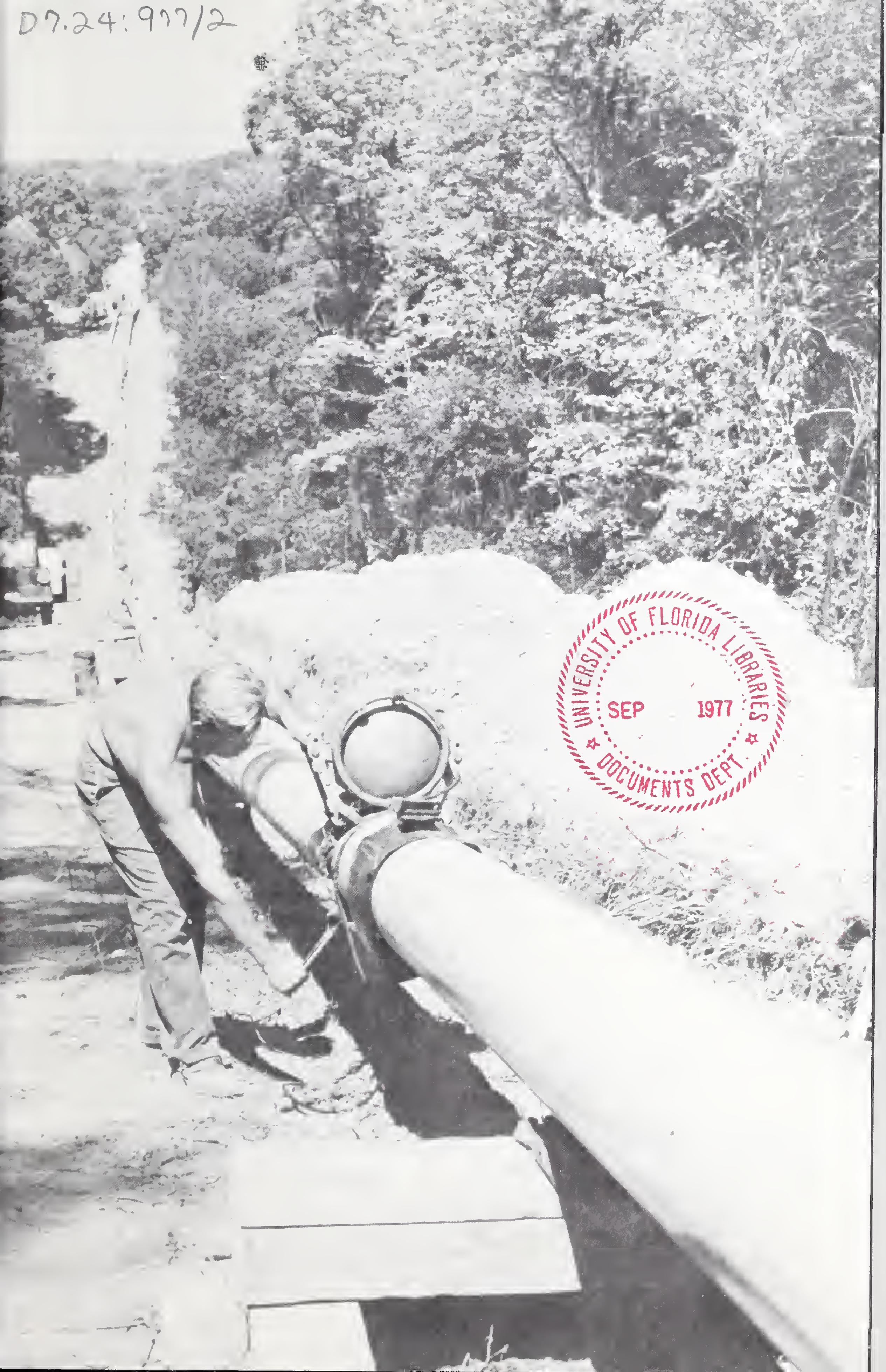
DFSC

FUEL LINE

JULY 1977



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DFSC FUEL LINE

A DEFENSE FUEL SUPPLY CENTER
TECHNICAL PUBLICATION
July 1977

FUEL LINE is an official technical publication, published quarterly by and for Defense Fuel Supply Center and Fuel oriented clientele. FUEL LINE is designed to provide timely, factual information on policies, plans, operations and technical developments of Defense Fuel Supply Center and other interrelated subject matter. Views and opinions expressed in the FUEL LINE are not necessarily those of the Department of Defense. All inquiries are to be addressed to: Defense Fuel Supply Center, Editor, FUEL LINE, Public Affairs Office (AP), Cameron Station, Alexandria, Virginia, 22314. Telephone: (202) 274-7898.

Major photographic services are supplied by Defense Supply Agency, Administrative Support Center, Technical Presentations Division.

COVER

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COMMANDER OPENS WORLDWIDE PETROLEUM CONFERENCE

Major General Raaen
Commander, DFSC

The Second Worldwide Petroleum Conference was held at Cameron Station from 10 through 12 May 1977. Hosted by Defense Fuel Supply Center (DFSC), the conference was attended by approximately 100 representatives from outside Federal agencies including the Unified Commands and Military Services. The major objectives were to determine the course of action to be taken in order to improve the DoD bulk petroleum support posture. This included consideration of those areas for which stocks must be stored outside of the requiring area or cannot be prepositioned anywhere. In addition, the plans that exist for transporting fuel from wholesale terminals to requiring activities when such stocks are needed were considered. The conference also served as a forum for updating key personnel from the Military Departments and the Unified Commands on DoD, JCS and FEA programs, as well as other important energy matters.

Much was accomplished as a result of the 1976 conference when the emphasis was placed on the Inventory Management Plan. It is believed that even more results were realized during the 1977 conference. Moreover, the support capability of the DoD bulk petroleum logistics system will be greatly strengthened when the plans and programs which were discussed during the conference come to fruition.

Attendees at the Second Worldwide Petroleum Conference included: (Front row from l to r) - Brigadier General Lawrence F. Sullivan, Executive Director, Supply Operations, DLA; William B. Girard, DLA Small Business and Economic Utilization Advisor; Fredric Johnson, Director, Oil Acquisition and Transportation Liaison Office, FEA; John R. Noland, Deputy Director of Energy, Assistant Secretary of Defense for Manpower, Reserve Affairs and Logistics; and Captain Robert L. Ringhausen, Deputy Commander, DFSC.

* * * * * * * * *

RECORDING REDUCED TANKER LOADING RATES

All petroleum QARS are requested to record in Block 28 of the DD Form 250-1, the times spent in cushioning ships' tanks while loading JP-4 as well as any other periods during which loading rates are reduced. Each entry should indicate the time period involved, the loading rate and the reason for same. It is anticipated that inclusion of such details will expedite the evaluation and processing of any demurrage claim the Government may be obliged to file at some future date.

DISALLOWANCE IN IMPORTED CRUDE OIL COSTS

Federal Energy News, FEA

The Federal Energy Administration has delivered notices to 20 multinational oil companies alleging that they inflated crude oil costs by $336 million in transactions with their foreign affiliates, FEA Administrator John F. O'Leary announced recently. The notices propose to disallow the excess costs.

FEA anticipates that some of the disallowed costs may be offset by "banks" of allowable costs that have not yet been passed through to the marketplace, but that a substantial portion of the disallowed costs will be refunded to consumers.

"The notices we have sent to the 20 oil companies are the result of a lengthy examination of the very complex transactions of the international oil market," O'Leary said. "They fulfill a commitment the agency has made that the prices consumers pay for their oil products be based on fair market values for crude oil, rather than artificially high prices paid by U.S. companies to their own foreign subsidiaries."

The official Notices of Proposed Disallowance were issued under FEA's transfer pricing regulations, O'Leary explained, and cover transactions between U.S. based parent companies and their foreign affiliates from October 1973 through May 1975. The current notices supersede two previous groups of notices issued during 1975 for a total of $275 million.

At that time, the companies involved raised questions about the validity of the data FEA used to calculate the excess costs. The data issues mainly involved differences in accounting systems used by the companies. The new notices are based upon a revised data base prepared by FEA. They cover disallowance of costs not only in cash transactions, as was the case with the previous notices, but also in crude oil exchanges.

FEA's transfer pricing program monitors transactions between U.S. companies and foreign affiliates. The agency compares such transactions against open market sales between unaffiliated companies, and disallows inter-affiliate costs in excess of the arms-length standard prices.

The companies involved have 10 days to reply to the notices, explaining why the questioned costs are justified. They may request conferences, and be represented by counsel.

If the company fails to reply in writing by the end of the 10-day period contesting the proposed disallowance, the order becomes final. Company responses contesting the proposed cost disallowance will be thoroughly evaluated prior to a final FEA decision, and companies may appeal orders to FEA's Office of Exceptions & Appeals.

DEFENSE FUEL SUPPLY CENTER

ASSUMES

STRATEGIC PETROLEUM RESERVE

RESPONSIBILITIES

by Colonel Curtis G. Shamblee, USA

Major Russell Charlesworth, SPR Program, Plans & Operations Officer, discuss Program with Robert Gathright, Procurement Agent.

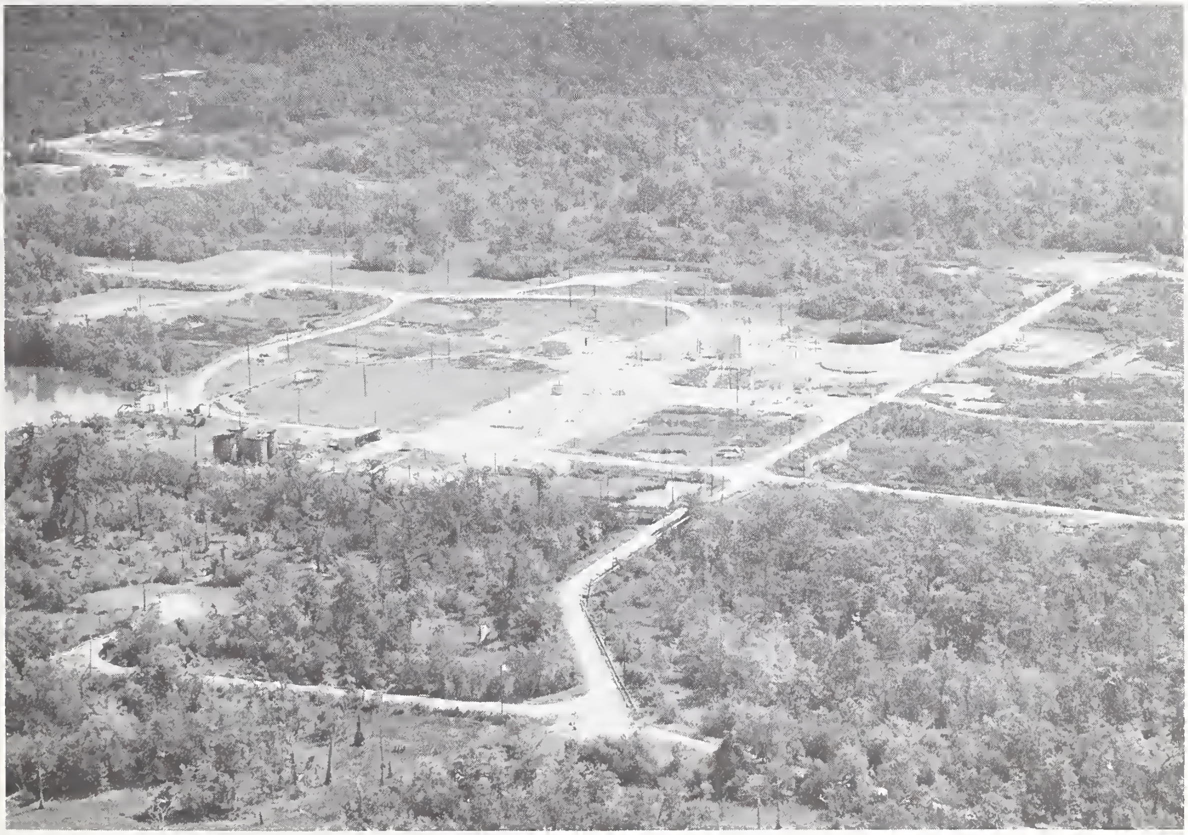
The repercussions of the denial of petroleum and the simultaneous price increases of the 1973-74 oil embargo included the loss of $35-45 billion in gross national product and 500,000 jobs. To diminish the effects of a future supply disruption, the Energy Policy and Conservation Act of 1975 provided for the establishment of a Strategic Petroleum Reserve (SPR) of up to one billion barrels of crude oil. Current legislation has approved a 500 million barrel SPR to be in storage in accordance with the following schedule:

> 150 million barrels by December 1978; 325 million barrels by December 1980; and 500 million barrels by December 1982. The President has recommended acceleration of the program which would require the 500 million barrels to be in storage by December 1980. This equates to a fill rate of over 400,000 barrels per day.

On 11 April 1977, the Defense Fuel Supply Center became a vital part of the SPR Program. Through a Federal Energy Administration (FEA) - Department of Defense (DoD) Interagency Agreement (IAA), DFSC was assigned the procurement mission for crude oil for the SPR. In addition, DFSC is responsible for all phases of contract administration including scheduling and ordering, inspection and quality assurance, and the payment of contract obligations.

Three days after the FEA-DoD IAA was consummated, DFSC received the first purchase request, Oil Acquisition Order (OAO), for 10 million barrels; this was later amended to 18 million barrels. Deliveries of this crude are to begin in June 1977. The second OAO is anticipated in early June for the purchase of 24 million barrels.

To accomplish this mission DFSC has orgainzed a Program Director's office, consisting of two military personnel that reports directly to the commander. In addition, a new organization has been created--a Crude Oil Division under the Directorate of Procurement and Production--specificly to buy crude oil for the SPR program to be stored in the Gulf Coast area.



BAYOU CHOCTAW SALT DOME AREA

CRUDE OIL STORAGE AREA

Photo credit: U.S. Army Corps of Engineers

This division consists of two buying teams composed of contracting officers. The remaining SPR work is to be accomplished by the appropriate division and or office of the existing DFSC organization. These divisions and or offices will be supplemented with additional personnel as required to accomplish the extra workload. A total of 34 civilians and 2 military may be required to accomplish the SPR mission. As of 1 June 1977, 4 civilians and 2 military were on board and additional personnel are being recruited as the need arises.

On 6 May 1977, DFSC issued the initial Request for Proposals (RFP) for 8 million barrels (now 16 million) with a closing date of 14 June 1977. Contract award is anticipated of 15 August 1977. The remaining 2 million barrels will be purchased under a "spot buy" RFP. This is an accelerated procurement process which will allow award within 72 hours after receipt of offers.

FUEL PIPELINES AND THE ENVIRONMENT

by Fadhill Khattat
Environmental Control
Office, DFSC

Among the most viable fuel conveyance systems, buried pipelines offer the most reliable and safe large volume method of transporting petroleum products on land. Coupled with economic benefits on a rate per barrel basis, pipelines offer added environmental advantages over other land and water borne transportation systems. However, recent Federal environmental laws and land use legislations in some states have imposed regional and area-wide restrictions on right-of-way acquisition, river and highway crossings, clearing of vegetation, protection of fish and wildlife, damage to wetlands, and other land and water uses.

It is now essential, therefore, to conduct a field survey of pipeline route alternatives to avoid, prevent and protect against destruction of valuable resources such as trees of timber value, cropland and wetlands. Land surveys are carried out in such detail as to characterize and inventory the environmental conditions before actual selection of a feasible alternate pipeline route, prior to real estate acquisition or easement, construction of the pipeline and operational testing phase. Surveys principally cover specific land and waters uses, community socio-economic factors and agency permit requirements.

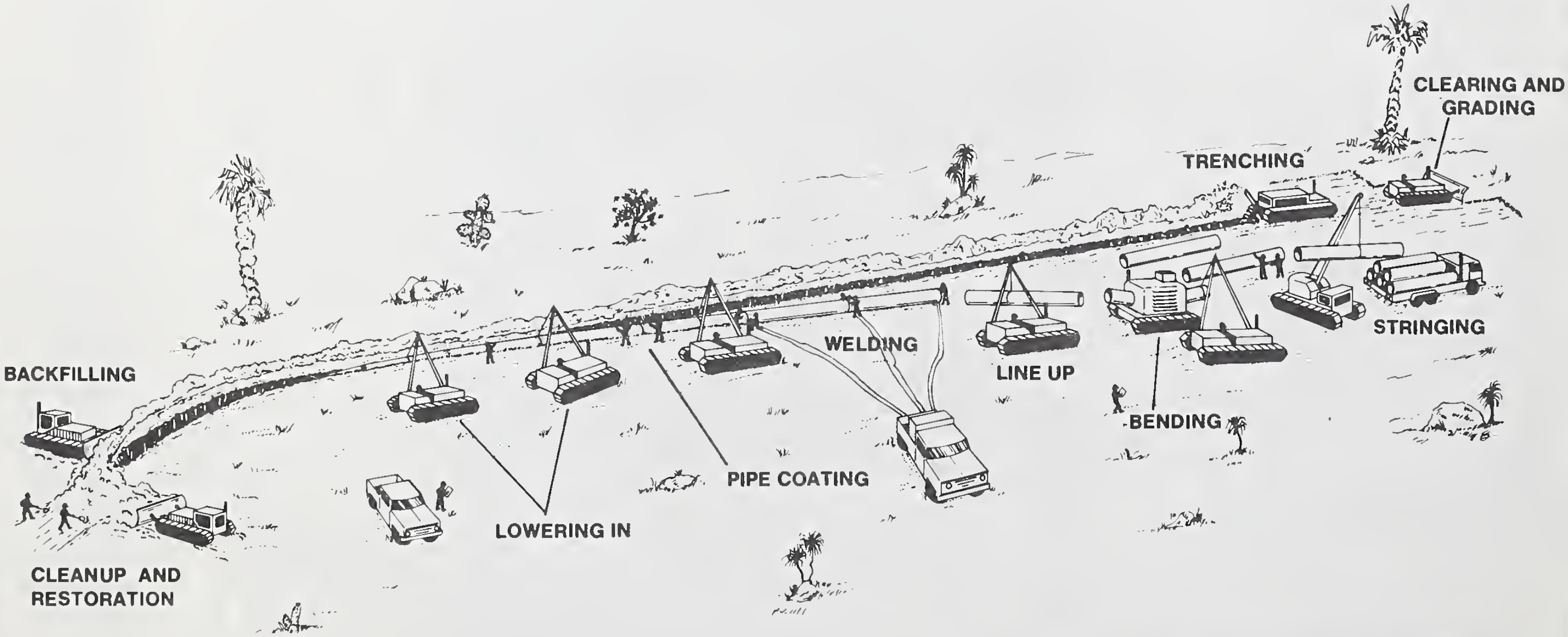
Land use characteristics are inventoried to delineate whether the selected route will pass through public lands (Federal, state and military reservations), Indian lands, or private lands. Construction activities requiring approval from Federal agencies are summarized as follows:

AGENCY	CONSTRUCTION ACTIVITIES	FORM AND REFERENCE
U.S. Department of Agriculture (Forest Service)	Pipeline construction across National Forests	Use Permit (36 CFR 251.50)
U.S. Department of Army (Corps of Engineers)	Pipeline construction across navigable waters and wetlands	Permit to Construct (33 CFR 209.120)
U.S. Environmental Protection Agency	Installation of storage tanks	Permit to Construct (40 CFR 112)
U.S. Environmental Protection Agency	Operation of storage tanks	New Stationary Sources (40 CFR 60)
U.S. Department of Interior (Bureau of Land Management (BLM))	Pipeline construction across public lands administered by BLM	Easement (43 CFR 2800)
U.S. Department of Interior (National Park Service)	Pipeline construction across National Parks	Easement (36 CFR 5.7)
U.S. Department of Interior (Fish and Wildlife Service)	Pipeline construction across rivers	Easement (43 CFR 2800)
U.S. Department of Transportation (U.S. Coast Guard)	Pipeline construction across navigable waters	Permit to Construct (33 CFR 115)

In addition, interaction with the State's Department of Natural Resources or Environmental Conservation will be necessary to obtain the required Permit to Construct the pipeline on State lands. It is also important to seek advice from regional or state planning boards or agencies concerned with compatibility of new construction projects with existing or proposed land use plans and to request a review of the pipeline construction plan and alternatives to the proposed pipeline route.

Where required and deemed necessary for Federally supported pipeline construction projects, an environmental assessment/statement is prepared to discuss the project and make available for agency review. This assessment will focus on all proposed alternative routes of the pipeline and on an in depth evaluation of their environmental impacts. Particular attention is paid to adverse impacts that cannot be avoided or could be readily

TYPICAL PIPELINE CONSTRUCTION SPREAD



SCALE CONDENSED FOR ILLUSTRATIVE PURPOSES

Source: U.S. Bureau of Mines, U.S. Bureau of Labor Statistics,
American Petroleum Institute and Federal Energy Administration

Typical pipeline construction spread

mitigated. Where mitigating measures are envisioned, these should be presented at every stage of pipeline construction activities. As an integral part of planning, short and long term effects on the productivity of environmental resources should also be discussed.

It is not possible to list potential environmental impacts of all pipeline construction projects singlely because of geographical variations in environmental values encountered. However, the following list of impacts must at least be considered:

.....Physiography - Changes in land form, slope stability and excessive soil erosion.

.....Hydrology - Alteration in surface drainage pattern, shore and bank erosion and effects on water quality and water table.

.....Vegetation - Destruction of economic corps, reduction in valuable range and brush land, siltation effects on wetland productivity, woodland clearing, elimination of wildlife habitats, and displacement of unique species.

.....Human - Land use changes, effects on multiple use and land values, impacts on population growth, effects on local services and noise impacts. Effects of air pollution on human health and welfare, impingement on cultural historical land marks and amenities.

With proper planning and understanding of local, regional and Federal environmental protection standards and requirements, the laying up of a pipeline route will meet public acceptance and assure the completion of a project with minimal delays.

◆◆

OIL SPILL REPORTING

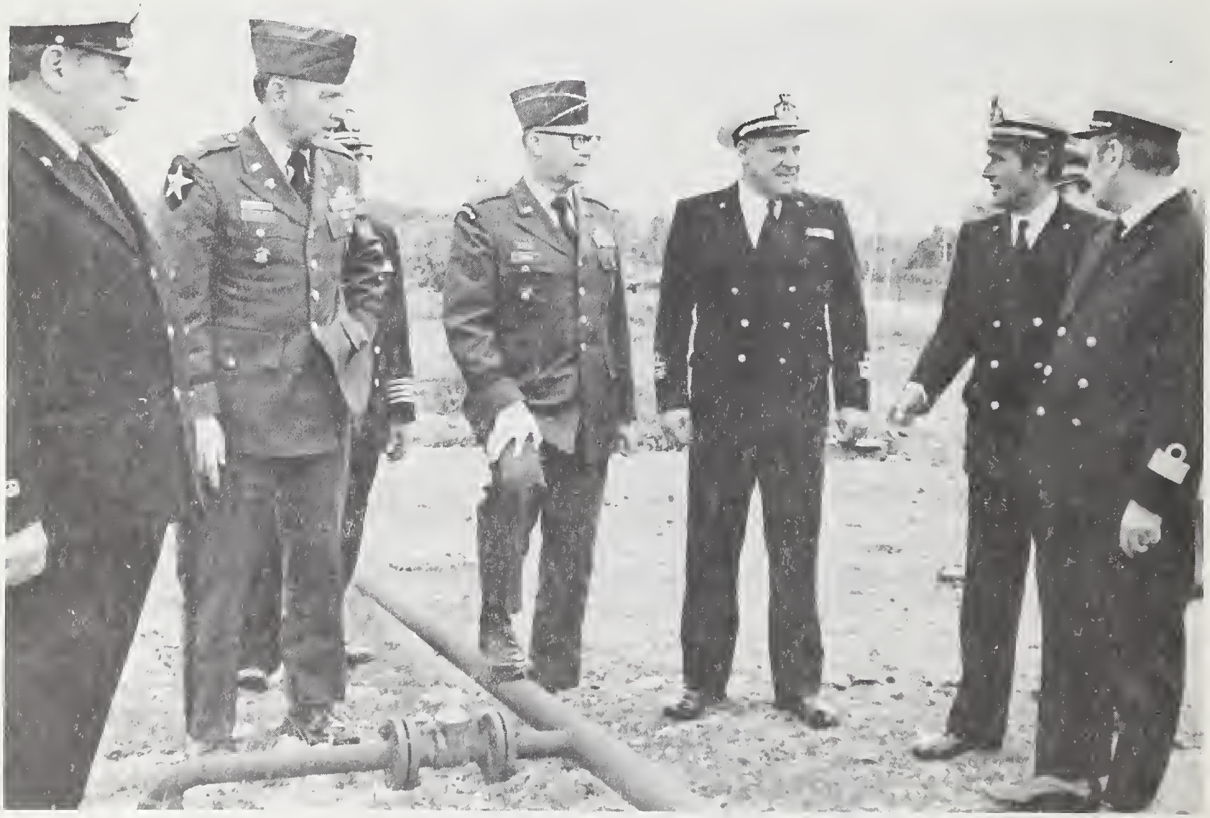
Effective 1 January 1977, oil spills occurring in the Continental U.S. are required to be reported to the National Response Center via the toll-free telephone number, 800-424-8802. There are a few exceptions in 33CFR153 which mainly deals with impracticality and spill reporting in Alaska and Hawaii.

MG RAAEN ON INSPECTION

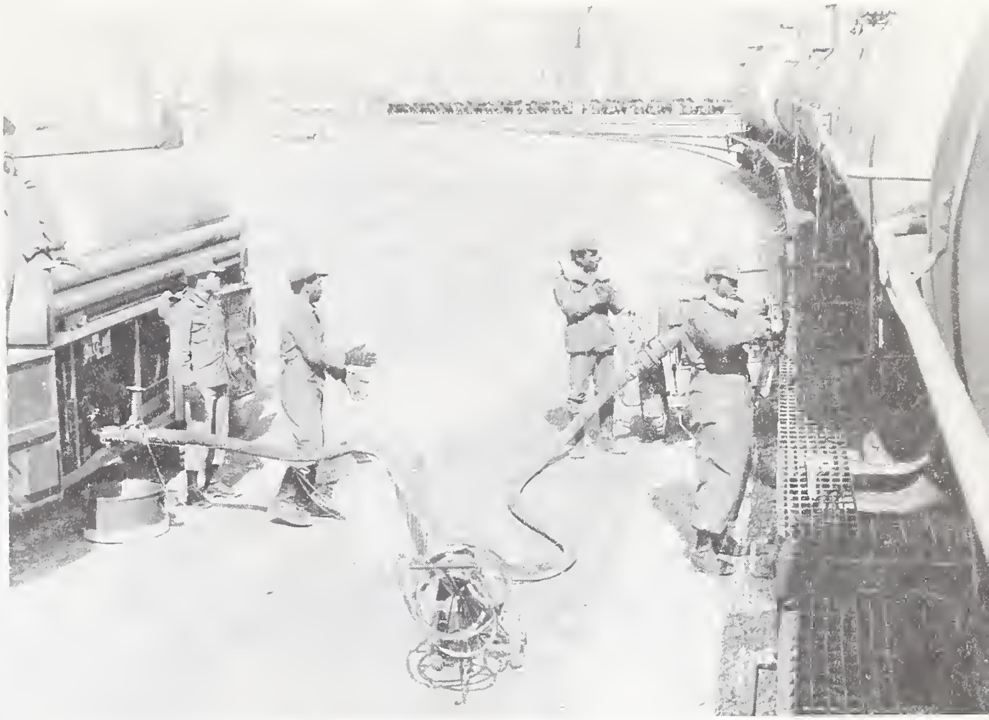
During an inspection tour of NATO operations in Europe, Major General John C. Raaen, Jr., Commander, DFSC, met with and discussed issues of importance with DFSC customers and contractors.

Areas visited included Stuttgart, Heidelberg, Ramstein, Zweibruecken, Naples, Sicily, Rome, and London.

Major General Raaen's informative and busy trip concluded with his attendance and presentation before the Joint Petroleum Operation (JPO) Conference in London, 26-28 April 1977. Attendees at the conference were from the various military services (CONUS & Europe) and petroleum industry.



From l to r : Chief Petty Officer Dino Miglorini, Italian Navy, Augusta, Sicily; Colonel Robert R. White, Commander, DFR, Europe; Major General Raaen; Rear Admiral Luciano Fortana, Italian Navy, Augusta, Sicily; and Lieutenant Francesco Condina and Colonel Michele Russo, NATO POL Terminal, Augusta, Sicily.



Unloading fuel

DFSC ACTS TO EASE ENERGY CRUNCH

by Elizabeth Platt

THE CITY OF CINCINNATI

On 30 January 1977, Martin J. Harty, Counsel, DFSC and Lieutenant Colonel Ronald P. Cramer, Commander, Defense Fuel Region, St. Louis, under the direction of Major General John C. Raaen, Commander, DFSC, met with the Mayor of Cincinnati and his staff to finalize a Replacement in Kind (RIK) agreement for 250,000 gallons of Fuel Oil Number 2 (FS2). The replacement covered fuel supplied from Defense Fuel Supply Point (DFSP), Cincinnati, to the City of Cincinnati when severe weather conditions, gas shortages and river icings created fuel oil needs significantly greater than the City's local commercial suppliers could meet. Administrative arrangements for the pickup, distribution, and return of RIK fuel by a commercial carrier were also established, with fuel movements commencing the next day. An additional 100,000 gallons of FS2 were subsequently authorized for release to the City and the final shipment was made on 24 February 1977.

FORT JACKSON

The DFSP, Charleston, came to the rescue of Fort Jackson, South Carolina, by providing 200,000 gallons of Diesel Fuel Marine (DFM) at the height of that area's winter heating fuel shortage. The shipments were arranged by DFSC.

FORT KNOX AND LEXINGTON BLUEGRASS

In addition to the Cincinnati rescue mission, the DFSP, Cincinnati, assisted Fort Knox and Lexington Bluegrass Army Depot, in Kentucky, when commercial fuel suppliers drastically curtailed allocations to these hard hit areas. In Fort Knox, for example, the number of degree days*--between the beginning of the heating season and February 1977 when commercial allocations of natural gas were cut to one-third the use level for February 1973--was about 40 percent above "normal."

At DFSC's request, Military Traffic Management Command Headquarters, Washington, D.C., implemented the military operated vehicle plan. These Government-owned vehicles were used to transport fuel from the DFSP, Cincinnati to Fort Knox and the Lexington Bluegrass Army Depot. This helped to relieve the military shortages and decrease military fuel demands on local suppliers, thus leaving more fuel for nearby communities through the civilian supply system.

Tankers from Charlie Company, 75th Support Battalion, hauled approximately 500,000 gallons of No. 2 diesel fuel, and were used to unload 150,000 gallons of fuel from railroad tankers arriving from Arkansas to help relieve the Fort Knox fuel shortage.

Thanks to DFSC, Military Traffic Management Command and the coming of spring and warmer weather, the fuel shortage in thse areas was temporarily alleviated. Hopefully, however, the energy conservation efforts exhibited during the shortage will continue.

*A degree day (for heating) indicates the number of degrees the mean temperature falls below 65 degrees. The American Society of Heating, Refrigeration and Air-conditioning Engineers has designated 65 degrees as the point below which heating is required.

THE ENERGY ANSWER

National Coal Association

PERSPECTIVE

In recent years, most of us have personally experienced the problems created by shortages of gasoline and natural gas. As Americans--blessed with abundant resources--we have found it difficult to believe that these shortages were real. And far too often we have looked for a scapegoat to blame as we ponder our high fuel bills. However, few problems that have faced the nation have been more persistent, complex and difficult to solve than today's energy problems.

As a nation, we are learning that energy is closely tied to our standard of living and our ability to earn a living. We need to conserve the energy we have, to make the most efficient use of our presently available energy sources, while increasing our production of domestically available energy supplies to meet the needs of a growing and expanding nation.

Our domestic supplies of oil and natural gas are rapidly running out and the price of those fuels has risen sharply. Last year we imported nearly half of the oil we used. And at a cost of nearly $32 billion.

Cold winter weather brought our limited supply of natural gas into sharp focus. Schools and factories closed in order to allow gas to be diverted to more essential uses such as homes and hospitals. And more than a million workers were laid off their jobs because of the shortage.

America's use of energy is based mainly on oil and natural gas today. Three-quarters of all the energy consumed in the United States last year was in the form of oil or gas. Yet these fuels account for less than eight percent of our national energy reserves.

Conservation of energy has become a critically important way of avoiding the severe penalties of energy shortages--but after two years in which U.S. energy consumption shrank, energy use went up by nearly five percent in 1976.

Nuclear power, which was once thought to be the electric utility answer for the future, has been beset by complex problems, and nuclear power today accounts for less than three percent of the energy consumed by the nation. While nuclear power is still important to our energy future, delays in its development will require an even greater dependence on the nation's most abundant energy resource--coal.

Coal accounts for over 80 percent of the nation's energy reserves. Yet last year less than 19 percent of U.S. energy came from coal--less even than imported oil.

LET'S LOOK AT COAL

COAL IS ABUNDANT The U.S. Geological Survey has identified coal deposits of 1.6 trillion tons and has estimated that U.S. coal deposits are probably nearly 4 trillion tons. These incredibly vast deposits are enough to supply the nation's needs for centuries.

COAL IS ACCESSIBLE We know where it is and how to get it. No costly exploration is needed. Coal sits right under our noses.

COAL IS AFFORDABLE A dollar's worth of coal produces more than twice the energy of a dollar's worth of oil at today's prices. And foreign producers continue to hike import prices higher and higher. Where will it stop? Only when we can meet our energy needs with our own resources.

COAL IS VERSATILE It can generate electricity, make steel, and heat and power our factories. By using more coal for these purposes we can free our dwindling oil and natural gas for other uses to which they are best suited.

COAL IS CONVERTIBLE We have the technology to transform coal into coal-burning liquid and gaseous fuels. These synthetic fuels are being tested as substitutes for oil and natural gas in specific applications.

COAL AS ELECTRICITY

At present, nearly half of all electricity is produced in coal-burning power plants. And three-quarters of the coal consumed in the U.S. is used by electric utilities. For the most part, when we talk of coal for energy, we talk of electricity generated from coal.

In addition to its existing share of electricity production, coal can replace the natural gas and oil now burned in boilers to supply nearly one-third of the nation's electricity.

Industry, too, can use more coal for the production of heat and steam. Coal can replace large volumes of natural gas used by industry and free those supplies from home heating.

If our nation is to shift its dependence from oil and natural gas to coal, national policies are needed that will allow utilities and industry to burn more coal with sound and effective environmental controls, yet at a resonable cost.

COAL AS OIL AND GAS

Coal can be converted into both liquid and gaseous fuels to be used first as supplements and, eventually, as replacements for oil and gas. The technology to make synthetic fuels from coal exists today, but their production costs have not yet made these substitute fuels economically competitive.

Much is being done to bring the costs down, so that synthetic natural gas made from coal can begin to supplement our heating needs, and, clean synthetic oil can be burned by industry in place of foreign oil.

Plants to convert coal into other fuels are extremely expensive and require years to construct. If coal-based oil and gas products are going to supplement dwindling natural reserves during the next decade, a national commitment will be required to expedite the construction of commercial facilities. Some other nations have made such a commitment and are today commercially producing synthetic fuels from coal.

COAL AND THE ENVIRONMENT

Land. The land where coal is surface-mined must be restored and it can often be improved through sound reclamation. Reclamation of surface coal mines is not an afterthought. It has become an integral part of the planning of any mine, and improved reclamation techniques have changed many of the ways in which surface mining is now done.

Long-term restoration measures are mapped out well in advance of the bulldozer. Soil samples are analyzed and records are prepared to help restore ecological balances.

Coal mining doesn't mean ravaged lands. Mined land is being returned to productive use. Cattle graze and corn and alfalfa grow on land that was once a coal mine. Homes and schools and industry have located on former mines, and reforested lands and lakes now serve as recreation areas.

About half the coal produced today comes from surface mines, the other half from underground mines. Both kinds of mining will have to be expanded in the future to meet the increased demand for coal.

Air. Coal can be burned cleanly and without undue risk to the health of the public. However, as a nation, we must make reasonable tradeoffs between our need to improve the quality of our environment and our need to shift away from oil and gas to a greater use of coal.

Enormous strides have been made in recent years to develop new technologies to remove sulfur, a major source of concern, from coal before it is burned. Many other steps have been taken to clean exhaust gases of sulfur dioxide, but the cost of such removal is extremely high.

New programs are also under study to remove the sulfur from the coal as it is burned, but like many new technologies, the development of commercial-scale equipment will take a few more years. In the meantime, we must pause in our drive to enforce standards which are not yet attainable without seriously curtailing energy supplies.

Research and development must continue so that the cost of pollution control can be brought down and a reasonable balance can be found between our need for more energy and cleaner air.

Water. A source of major concern in coal mining only a few short years ago was the problem of acid drainage from mines. This difficult environmental problem is caused by the reaction of subsurface water with coal in areas that have been mined. However, the coal industry has been working for years on research into the causes and prevention of acid mine drainage; results have been good. This environmental success story has led to new techniques to prevent the pollution of streams near coal mines.

COAL'S IMPORTANT ROLE HAS BEEN RECOGNIZED

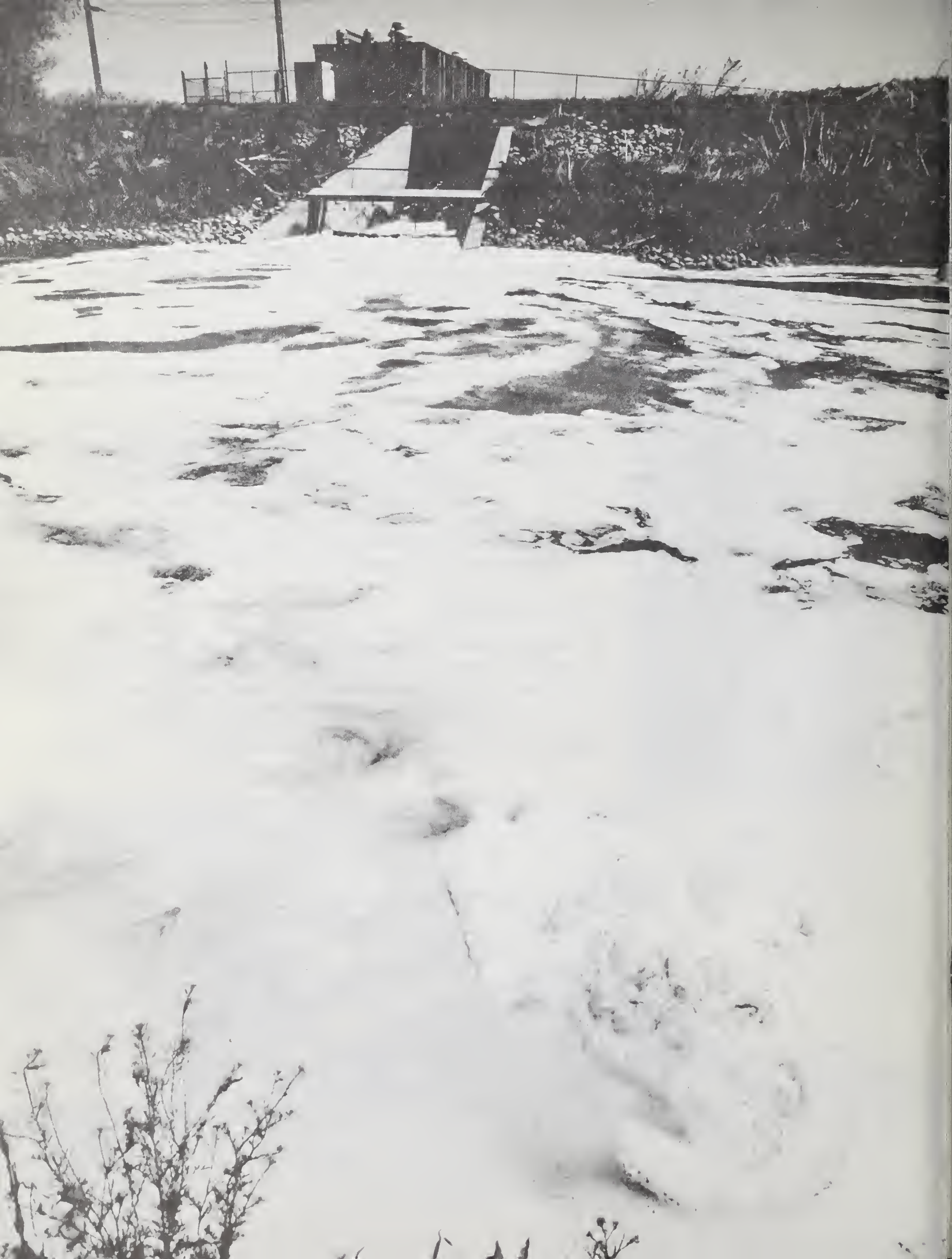
The increased use of coal proposed by President Carter is a realistic response to our country's energy dilemma. It can give us a reliable energy source and cut our dependence on costly imports. Using coal wisely will conserve our less plentiful fuels, so they can benefit us all.

A new day is dawning for coal. It promises to be a brighter day for all of us.

COAL...

AMERICA'S ACE IN THE HOLE

Photos courtesy of:
Consolidation Coal Company
Stearns-Roger Corporation
Les Henig



SOLID WASTE CONTROL PROGRAM EXPANDED

--*Excerpt, EPA Journal*
Nov/Dec 76

Environmental Protection Agency's (EPA) solid waste control activities will be greatly expanded under legislation passed in the closing days of the 94th Congress. The new law authorizes $35 million for the Solid Waste Office's operations in the current fiscal year, more than double last year's appropriation, $38 million in 1978, and $42 million in 1979. In addition, starting in fiscal '78, grants are authorized to States and regional bodies for planning and carrying out solid waste programs. About $140 million is authorized for State aid, research and other purposes in 1978 and $107 million in 1979.

The law also--for the first time--requires EPA to set standards for the handling of hazardous solid wastes and provides regulatory powers and penalities. In addition, the new law seeks to reduce the amounts of waste created, to recover materials and energy from wastes, and to dispose of wastes in ways that will not endanger public health or the environment.

HAZARDOUS WASTES

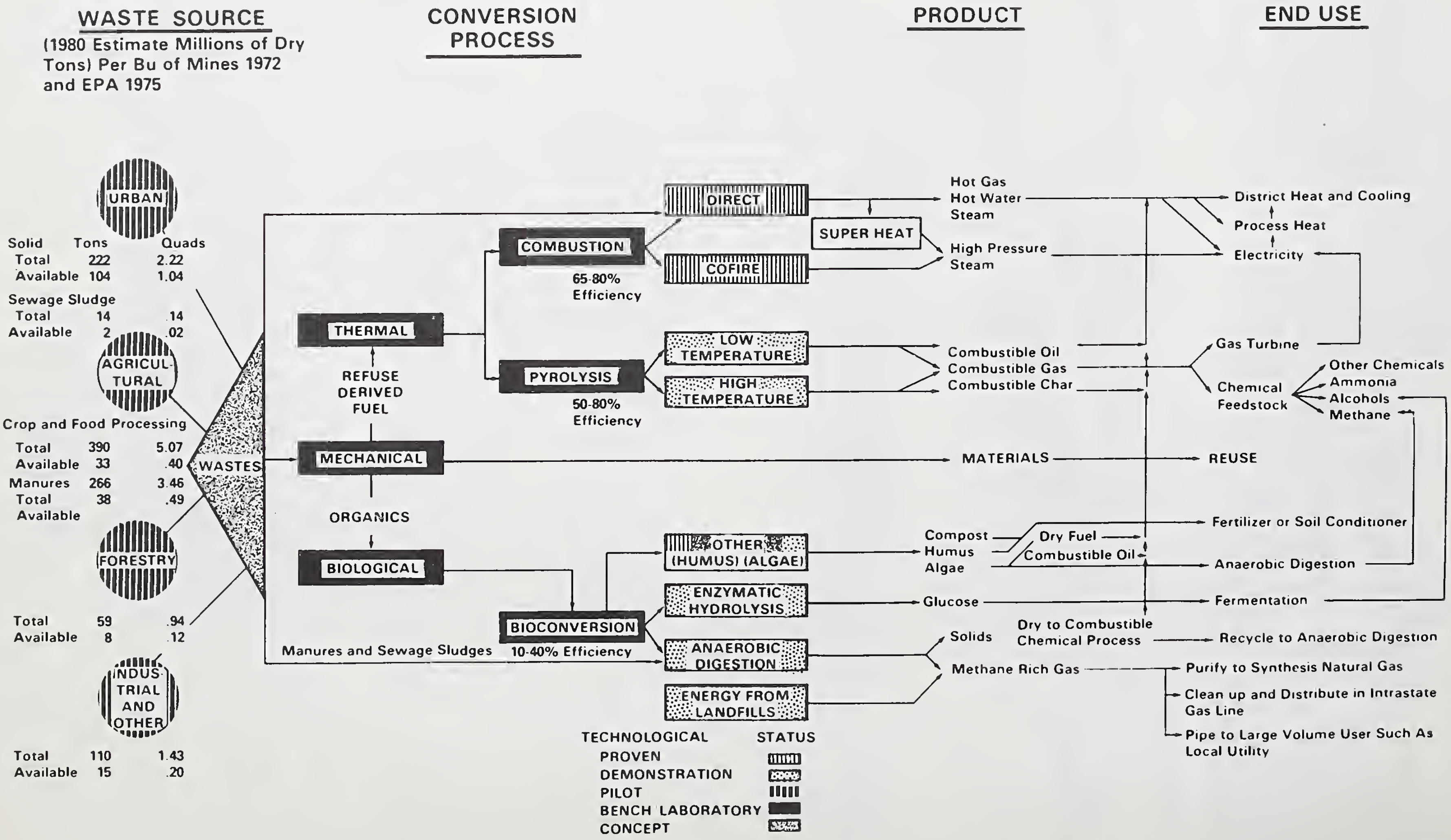
Hazardous waste is defined in the Act as any waste that "because of its quantity, concentration, or physical, chemical, or infectious characteristics" may cause death or disease or threaten public health or the environment. Examples might be industrial chemicals that may enter the food chain, substances that may wash out of landfills, and oily wastes that kill fish and wildlife.

EPA is required to identify and publish a list of hazardous wastes within 18 months and to set standards for the handling, transportation, and ultimate disposal of such wastes. Under EPA guidelines, States are to establish regulations for hazardous waste handling and issue permits for treatment, storage, or disposal.

OPEN DUMPING BAN

The law prohibits the open dumping of all solid wastes. Criteria for identifying open dumps, and for identifying sanitary landfills, will be published by EPA no later than October 1977, and the Agency will conduct a national inventory of all open dumps within the twelve months that follow. State or regional solid waste management plans must include the banning of open dumps. All open dumps throughout the country must be

OPTIONS
WASTE UTILIZATION



closed or upgraded by 1983. Special grant assistance to help meet these new requirements for land disposal facilities will be available for rural communities of less than 5,000 population and rural counties of less than 10,000 (or with fewer than 20 persons per square mile).

Grants to a limited number of "special communities" are also authorized. These are to be communities of less than 25,000 population, most of whose solid waste comes from outside their boundaries, causing serious environmental problems. Only one such grant (one project) can be made in each State.

The law also provides for: extensive research, development, and demonstration projects in solid waste technology; at least eleven special studies in specific areas such as glass, plastics, rubber tires, sewage sludge, mining wastes, and the hazards caused by birds at landfills near airports; and special emphasis on the rapid dissemination of information, on public education programs, and a central reference library of solid waste management data and other materials.

The new law, like the one it replaces, recognizes that solid waste is primarily a local problem that should be managed by State and local governments or regional groups. It encourages existing agencies to plan and carry out solid waste management programs.

---Submitted by:
Frank Khattat
Environmental Control
Office, DFSC

DFR LYNN HAVEN NOW DFR TYNDALL

The Defense Fuel Region for the Southeast section of the United States relocated from Lynn Haven, Florida, to Tyndall Air Force Base, Florida, effective 6 June 1977. At the same time, the name of the Defense Fuel Region was changed from DFR, Lynn Haven to DFR, Tyndall. The area serviced by the Defense Fuel Region is unchanged.

The proper addresses for communicating with DFR, Tyndall are:

Mail	Message
Commander Defense Fuel Region, Tyndall P.O. Box T.T. Tyndall AFB, FL 32403	DFR TYNDALL AFB FL

The telephone numbers for the DFR Tyndall are:

Autovon: 8-970-1110 ext 2865/2871 Commercial: (609) 283-2865/2871

CONTINUOUS WAVE LASERS DETECT OIL POLLUTION IN WATER

DEVELOPED BY RESEARCHERS AT REMOTE SENSING CENTER

The University and the SEA

This laser water pollution detection device, developed by researchers at Texas A&M's Remote Sensing Center, is being tested at the Naval Undersea Weapons Center in Groton, Connecticut.

Texas A&M University researchers have developed two laser scanning devices that are helping solve the mystery of water content in bays, rivers, harbors and other major bodies of water.

Created by Andrew Blanchard and William Hulse, engineering research associates at Texas A&M's Remote Sensing Center, the scanning devices are the first continuous wave sensors to be used to detect oil pollution and sediment content in water remotely, the engineers say. Their work was funded by the U.S. Coast Guard.

The Coast Guard currently uses a flora sensor, which emits a pulsating wave to scan air and water. The flora sensor, however, is potentially dangerous to living organisms because of its high energy output (10 megawatts). The new continuous wave sensors emit only 10 milliwats.

Blanchard and Hulse's first scanner, a dual-wave laser system completed about a year ago, is used in investigations that include scanning for and differentiating between materials that cause turbidity in water, constructing aerial maps and studying vegetation and soil conditions.

Examining turbidity, which may be caused by floating debris, sediment content, oil or organic and inorganic materials, requires an instrument such as the dual-wave system, capable of sending simultaneous beams of different wave-lengths, and receiving signals for more than one kind of material, Hulse said.

However, the dual-wave system is best suited for laboratory use since the material of which it is made is not resistant to prolonged salt-air exposure, he noted. Water samples can be gathered and then analyzed by this device in the laboratory.

Adaptable to many other uses, the dual-wave system also may be modified to construct contour maps of sediment densities and oil spill thicknesses along with spill movement in bays, rivers, lakes and along coasts. The dual-wave system is being modified to study terrestrail vegetation and soil conditions, Hulse added. Plant types, chlorophyll and moisture content potentially could be determined to give information on plant health of an area.

The new single-wave scanning system was tested recently at the Naval Undersea Weapons Center in Groton, Connecticut, Hulse said. "The new scanner is limited in comparison with the dual-wave system," he said, "in that it cannot be used for anything other than oil detection without some modification."

This limitation does not cancel the single-wave scanner's effectiveness, however, since it is ruggedly constructed of salt-resistant material and is capable of withstanding the effects of a coastal environment. "The system installed at the Weapons Center, capable of 24-hour a day operation, is programmed to detect oil," Hulse said, adding that it is the first device that effectively scans in almost any kind of weather.

Both scanners consist of two parts--a two and one-half foot optical head which contains the detector, and a console, resembling a 28-inch gray suitcase, which interprets the optical head signal into a digital communication code. The optical head of the single-wave system, designed for mounting on bridges and other structures over rivers and harbor waters, will alert Coast Guard clean-up stations when an oil spill is detected.

The surface and subsurface of the water are scanned, and, should oil be detected, the return signal triggers an alarm in the console, located at the clean-up station. "We use a blue helium neon laser in Connecticut because of the low sediment content of the water and the high sensitivity of the system to a thin film of oil in low turbidity," he explained. "The scanner will respond to as little as a drop or two of oil in a large body of clear water."

Hulse said that a red laser system is better suited for scanning turbid waters, such as those of the Brazos River. The use of laser to detect oil and other pollution in water is still in the experimental stages, but the two researchers are optimistic about the future of their continuous wave sensor.

---*Reprinted from The University and the Sea, Sea Grant College Program, Texas A&M University.*

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ENERGY SHORTAGE.......

AN OLD STORY

The first energy crisis in the United States developed in the 1840's when whale oil was the quality illuminant. But supplies declined and demand from industry increased, causing price rises to $2.50 per gallon of oil. Rapeseed oil, olive oil, linseed oil, and oil of turpentine were tried as replacements, but none was inexpensive, safe and efficient. Finally, about the time of the Civil War, coal oil came into use along with petroleum. As the demand for petroleum increased, so did the price which nearly trebled to $3 a gallon. The oil strike in Titusville, Pennsylvania, in 1859 set the stage for the development of the American petroleum industry. But in the early 1900's, the coming of the auto precipitated a growth in oil demand that far outstripped supply. Prices rose from 9½ cents per gallon in 1911 to 17 cents just 15 months later. (Sound familiar?) The catalytic cracking of petroleum into the more useful lighter hydrocarbons such as gasoline was patented in 1913, and carried us through until the shortage of 1973-1974.

Today's efforts to resolve the crisis are even more far-reaching than before. They include producing oil and gas from coal, developing offshore oil fields, learning to recover more oil from old fields, producing fuel from garbage and manure, as well as developing such alternative sources of energy as nuclear fusion and solar energy. Can science and technology come through for the United States? It sure looks that way.

Pumping Station
Getty Oil Refinery

DFSC FUELS INDOCTRINATION COURSE

The Spring 1977 DFSC Fuels Indoctrination Course was held at Cameron Station, 12 - 23 March. The purpose of this course is to provide Headquarters, DFSC personnel with an overview of the fuels industry.

The course is sponsored by DFSC (Office of Planning and Management) and conducted on a semiannual basis. Presenting the course were members of the American Petroleum Institute, National Coal Association, U.S. Army Energy Office, U.S. Navy Petroleum Office, U.S. Air Force Detachment 29 (San Antonio ALC), U.S. Army Quartermaster School, and DFSC. Personnel of DFSC who provided a very significant portion of the instruction were: Lieutenant Colonel Harold D. Yawberg, Major Russell Charlesworth, Colonel Carson D. Orr, Ed Biddle, Charles Raub, Wilson Chapman and Dr. John Krynitsky.

Upon completion of the course, students were presented a Certificate of Completion by Captain Robert L. Ringhausen, Deputy Commander, DFSC. The next DFSC Fuels Indoctrination Course is tentatively scheduled to be held at Cameron Station in October 1977.

The following personnel attended the Spring Fuels Indoctrination Course:

Phyllis Brown	DFSC-PCS	Charles Chapman	DFSC-N
Nannie Cohee	OC	Dennis Edwards	OF
William Foreman	PP	Linda Helmrich	CC
Hampton Holt	LC	Michael Hopper	CC
William Jung	PH	Patricia Kewer	N
Pamela Kopp	LB	Lawrence Lucas	AP
Rosemary Lutes	LP	Catherine Martin	OE
Colonel John Nelson	P	Lee Oppenheim	T
Catherine Penniman	OD	Mary Reid	OC
William Schoppaul	LS	Lynn Spurgeon	LC
Dennis Stanley	PCC	David Strasser	PG
Nancy Thomason	OB	Joseph Weiland	CC
Joyce Williams	PD	Ira Zell	LS
Lois Huntt	PE	Michael Wood	TB
Glen Rowinski	TA	Cecilia Montalvo	Det-29

MEMBERS OF THE SPRING 1977 INDOCTRINATION CLASS

OIL SPILL PREVENTION PLANS

by Calvin J. Martin
Environmental Control
Office, DFSC

In December 1973, the Environmental Protection Agency (EPA) published "Oil Pollution Prevention Regulations, 40CFR112." EPA requires that a Spill Prevention, Control and Countermeasure (SPCC) Plan be prepared and implemented by any facility that could reasonably be expected to spill oil into the waters of the United States. This affects such facilities as oil refineries, fuel oil dealers, and bulk storage and handling plants if they meet the following:

a. Has total buried storage greater than 42,000 gallons.

b. Has total non-buried storage of greater than 1,320 gallons.

c. Has any single container greater than 660 gallons.

SPCC plans were to have been prepared by July 1974 with implementation by 11 January 1975. The SPCC plan is prepared by the owner or operator and must be certified by a registered professional engineer. The EPA regulations contain guidance as to what should be included in a plan, the form in which the information should be presented, and good prevention engineering practices that have been successfully used by industry in the past.

This guideline approach is designed to provide flexibility so that older facilities can prevent spills at a reasonable cost. The plan is not submitted to EPA unless the facility violates certain conditions. The plan must, however, be available at the facility for EPA review to assure that it has been prepared and implemented. EPA regional offices conduct frequent inspections of facilities to confirm that the required design changes are constructed and prevention equipment installed as stated in the plan.

If a facility experiences a single spill of over 1,000 gallons or two spills which discharge a harmful quantity of oil (as defined in 40CFR110) within 12 consecutive months, the owner or operator must submit his plan to the EPA Regional Administrator for review. Based on this review, the Regional Administrator may require revision of the plan. In any case, the regulations require that SPCC plans be reviewed and revised by the facility owner and or operator and certified by the registered professional engineer every three years. SO YOU CAN SEE, IF YOUR PLANS WERE PREPARED WITHIN THE JULY 1974 TIME FRAME, A REVISION IS NOW DUE.

COAST GUARD REGULATIONS

by Calvin J. Martin
Environmental Control
Office, DFSC

When reviewing Spill Prevention, Control and Countermeasure (SPCC) Plans, U.S. Coast Guard regulations should also be reviewed to determine their applicability to your facility. The U.S. Coast Guard published prevention regulations, 33CFR Parts 153, 154, 155, and 156, for vessels and oil transfer facilities on 12 December 1972. These regulations became effective July 1974. Regulations applicable to other modes of transportation (pipelines, railroads, and tank trucks) are expected to be published in the near future. Part 154, which applies to large onshore and offshore facilities transferring bulk oil to and from vessels having a capacity of 250 or more barrels, is summarized below.

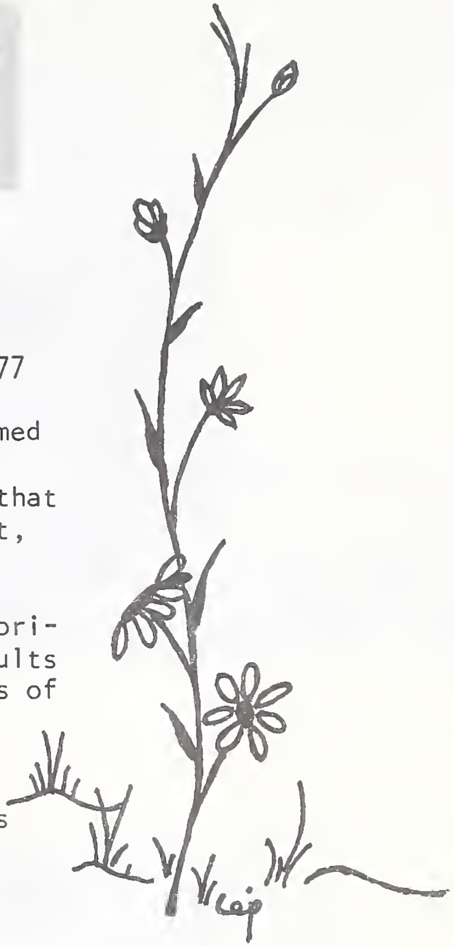
Each facility must have submitted a "Letter of Intent" to operate to the Captain-of-the-Port (COTP). Attached to the "Letter of Intent" must be an operations manual stating how the operating rules and equipment requirements of the regulations will be met. The duties and responsibilities of personnel conducting oil transfer operations must also be attached. The regulations allows the COTP to make broad interpretations regarding the needs of specific requirements. Some examples of equipment requirements are: spill containment pans in the hose handling and manifold areas; proper lighting for night operations; communications systems; and spill containment and cleanup capability.

The Coast Guard can inspect the facility, assess civil penalties for violations of the regulations and suspend operations when conditions are found that threaten the environment.

OIL OUTPUT DOUBLED IN TEST FIELD

After completing nearly two years of a pilot program on tertiary (third time) oil recovery, output from a 90-acre site has more than doubled--from 60 barrels to 163 barrels per day. The site is located in the North Burbank, Oklahoma field. Contractor for the $10 million project is Phillips Petroleum Company, Bartlesville, Oklahoma. The Energy Research and Development Administration (ERDA) is providing $3.4 million of the total. The tertiary recovery tests are expected to add some 600,000 barrels of oil to the field's production by 1980. Peak production is expected to reach 800 barrels a day. Ultimately, Phillips hopes to expand the tertiary recovery to a major portion of the Burbank field, thereby adding some 50 million barrels of oil. The pilot project involves four steps of injecting water or solutions into the oil formation to force more oil to the recovery wells.

VALUE ENGINEERING
..... IT'S ALIVE



by Walter A. Cornell
Directorate of Technical
Operations, DFSC

President Jimmie Carter's opening remarks to the 1977 International Conference of the Society of American Value Engineers (SAVE) at Dearborn, Michigan, affirmed this year's conference theme.....FOCUS 77--EXPAND HORIZONS. Oh! By the way, he hastily pointed out that he was not or is not to be confused with the current, more popular, resident of the White House.

The purpose of the conference was to show how the horizons of knowledge have been expanded to achieve results beyond normal expectations when the basic principles of Value Engineering (VE) were understood and properly applied.

One relevant question asked by one of the lecturer's was, "What is business in operation for, and likewise Government?" The obvious answers were "profit to the company and service to the people."

Value Engineering's inherent concept satisfies both of these important aspects. By placing a $ sign on the basic[1] function--customer (military) needs (specifications) are satisfied with a reliable, quality product and or service at the lowest possible cost.

The 1977 SAVE Conference was beneficial to all and gave renewed support to VE as a positive management tool. Also, it demonstrated to the industry and Government attendees how it's practical application can be effectively utilized in today's rapidly changing technical and social climate.

If there was any doubt in the attendees mind that Value Engineering in business and Government was dormant, this four day meeting proved the contrary. Value Engineering is definitely ALIVE!

[1] Reference: DoD Handbook 5010.8-H
In VE, function is defined as the specific purpose or use intended for something.

"Gauging off" on top of refinery tank

WHAT IT'S LIKE TO BE A QAR

by LCDR Richard J. Moore, SC, USN
Defense Fuel Quality Assurance
Office, Caribbean

Although you may be generally aware that DFSC has Overseas Petroleum Quality Assurance Representatives (QARs), do you know where they are located and what their responsibilities are?

DFSC QARs are located in many exotic places throughout the world; in the Mid-East at Bahrain on the Persian Gulf; in the Pacific at Hawaii, Manila, Singapore, Taiwan, Guam, Okinawa, and Sagami, Japan; in Europe at Stuttgart, Naples, Athens, Spain, England, Sicily, and France; and in the Caribbean at Curacao, Aruba, Dutch West Indies, Puerto Rico and St. Croix, Virgin Islands.

DFSC petroleum QARs are responsible for assuring the U.S. Government receives exactly what it purchases, both in quality and quantity. They carry out their duties both at oil refineries where petroleum products are purchased and at contractor-operated terminals where these products are received and stored.

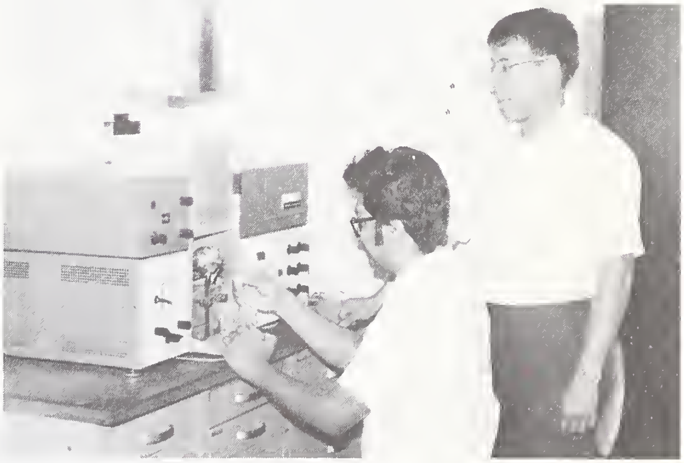
In order to find out more about DFSC' QARs, let's follow Air Force Captain John Carrillo and Navy Lieutenant Junior Grade Rick Meyerkorth, as they prepare for the loading of a typical tanker at the Hess Oil Refinery, St. Croix, Virgin Islands.

Prior to tanker loading, John and Rick must assure that a full range of specification tests are performed on each tank and that the product tested meets required specifications. First step is to climb each refinery tank, ranging from 50 feet and higher, to observe the refinery's sampler drawing fuel samples. At the refinery's laboratory they witness the physical and chemical test performed on the samples to be loaded aboard the tanker.

When the tanker arrives, the QARs go aboard to inspect it, making certain all shipboard tanks have been properly cleaned for their respective cargo and all applicable valves are closed and sealed. This closing and sealing helps assure that each product does not accidentally get contaminated with water or with another product. In performing this inspection, John and Rick must climb more than fifty feet down into each tank on the ship. On some ships there are twenty-one tanks and on others there may be from twenty-seven to thirty.

After the tanker has passed inspection, the QARs must be certain the refinery's shore tank plus the pipeline from the refinery's tank to the ship's pier, both contain on-specification product. Once

Checking tests results



Captain Carrillo (right) witnessing an atomic absorption lead test in Hess's lab.

again they are required to climb the refinery's tank and ensure that the refinery employee ullages the tank properly and take the product's temperature with a specially mounted thermometer. All of this is performed so that the exact quantity purchased can be determined. Only when these phases have been accomplished, will permission be granted to begin loading.

Loading a cargo may take five to twenty-four hours, depending on the quantity. During this time, John and Rick ensure that periodic samples are taken of the product going aboard and of the product already aboard, so they may be certain that the product DFSC is buying is still meeting all the required specifications.

If the tanker is taking bunkers at a port, the QAR may be required to sample gauge and test the fuel. If things go well, they may even get a few hours sleep during a tanker loading.

When the loading has been completed, John and Rick witness the ullaging of the vessels' tanks, calculating the quantity of product aboard by measuring the height of the empty space in each tank of the ship. They then must climb the refinery's shore tanks once again to witness "gauging off," (measuring the height and temperature of product in the tank now that loading has been completed). Following this, they must witness the laboratory tests of samples taken of the tanker's cargo and calculate the quantity loaded as measured both by ship's ullage figures and by the refinery's shore tank figures. This calculating is always accompanied by some anxious moments, because

LTJG Meyerkorth (right) inside a refinery JP4 tank on top of its floating roof, witnessing sample drawings.

the ship's ullage figures and the shore figures must match within one-half of one percent. If there is no match, the error must be found and all necessary paperwork on the loading documents completed. The time between the completion of loading and the sailing of the tanker is a very busy three to four hours for the QARs. Insomnia is not known to be a common QAR problem.

A loading QARs life is filled with as many frustrations as satisfactions. Some of the frustrations include: laboratory tests not meeting specifications; the refinery not having the product ready when needed; ship and shore quantity measurements not matching at the end of a loading; and tanker schedules being notoriously unreliable and unpredictable. Other frustrations can be the long hours, the constant working at night and on weekends, and the problems in making long distance telephone connections in overseas areas.

But most loading QARs seem to feel that all these frustrations are outweighed by the sense of accomplishment that comes from watching a tanker sail with an "on-spec" DFSC cargo. John and Rick, together, experienced this pleasure 126 times during 1976. That is the number of tankers loaded at Hess Oil in St. Croix during that year with $248 million worth of DFSC product.

Being a QAR and living in an exotic or romantic place can be very rewarding. Both John and Rick live with their wives and children in condominium-style apartments near Christiansted, the larger of the two towns on St. Croix. Even though many long hours are spent loading tankers, the QARs do find time to explore and enjoy the fantastic Caribbean. John recently purchased a Hobie-Cat sail boat and in between tankers, he and his family go sailing on the green, crystal clear water around St. Croix. In addition to the water sports available in this area, they both have the occasional opportunity to visit other Caribbean islands, such as Puerto Rico and St. Thomas. There is also another pastime in the Caribbean that is enjoyed and shared by many -- loading under a tropical sun on the beautiful, white sand beaches that surround most of the islands.

**KEEP OFF
THE GAS.**

Stewart H. French, author of the article, "C.O.V.E.R.," Is an Aviation Fuel Inventory Manager with Detachment-29 of the Air Force San Antonio Air Logistics Center, Directorate of Energy Management, here at Cameron Station. Widely read on the subject of energy conservation, his work has appeared previously in Air Force periodicals in Texas as well as other DoD publications. His following message reflects on the future of all of us.

C.O.V.E.R.

There are many connotations to the word cover. The dictionary defines the title as a blanket, cap, cloak, cozy, mantle, shroud, swathe, wrap, veneer, and the most common usage of all, a lid.

A lid keeps the contents of a boiling pot confined so it will not boil over and put the fire out. Sometimes the lid is pushed up by the interaction of the contents. It overflows, and the contents sputter on the surface of the stove until they dissipate. At intervals, a good cook lifts the cover to let the steam out.

Americans have been asked to voluntarily put the lid on energy consumption. But the lid is not yet secured by federal regulation, nor is there any other regulation on the pressure cooker world of energy, so consumption is dissipating our resources. We, the public, do the "sputtering" and blow our "lids" over higher energy costs. We have not taken seriously the warnings that we do not have inexhaustible resources at our disposal, now or in the future. The energy cover is lifted temporarily, to mollify our attitudes toward summer driving, but promises of "ridiculous" gas prices will put the "lid" on where it hurts--our pocketbooks.

A blanket is a cover which connotes security and warmth. Wrapped in it, we snuggle in complacency, cozy and warm. Under these covers we drowse and dream and sleep secure, insulated from the cold, cold world outside. But our blanket is woven from miracle fibers, concocted from petrochemical processes, heated by electric coils and comfort controlled by electronic thermostats.

What happens when there is no more electricity to warm our blankets, or even to power the looms to make them? What happens when the heating oil or natural gas runs out? Is our blanket going to be too thin then?

We were warned about the possible consequences of a harsh winter; too little oil, far too little natural gas, and a shortage of transportation for coal. The unthinkable happened! The warning came true! And, all at once! But, did we learn? Not wholly. We lacked the sense to voluntarily control our consumption of energy, so we were shocked that our old adage, "money can buy comfort," was not necessarily true. Like robots we had not been prepared for disruption to our automated, comfort-related life styles. We did learn that wrapping ones self in dollar bills is too thin a cover for comfort, nor does it keep ones family warm.

We Americans have lived in a garden of dreams with everything coming up roses. We have been protected by the canopy of military power. We have been swathed in swaddling clothes of petroleum fibers. We have been shrouded from the covert operations of foreign powers who would destroy our industrial production by cutting our petroleum supplies. Our heritage has been to feed, clothe, and comfort the world. Is this not still our goal? Is the world, including us, to suffer as we destroy ourselves because we cannot, or will not, apply our minds to the simplistic common sense knowledge that we have to conserve? We must turn about! Face the facts! Knuckle down and conserve those resources we do have. The future will prove whether the renowned brilliance of our technology can harness the powers of the sun; whether the absolute safety of atomic energy can be certified; and whether coal can be converted to gas, or not. But that is the future! Not now! Now, we must prepare for next winter.

Breakthroughs into the realm of the unknown have not yet been achieved. At this moment we have just recovered from a long hard winter. We now realize the implications of consumption (we have the utility bills to prove it). And we are finally aware of the limitations of our energy resources. So, I have a suggestion.

As Department of Defense employees, let's adopt a code known to us as "C.O.V.E.R." Let's not keep it to ourselves, or classify it SECRET. Let's let America know that "C.O.V.E.R." simply means:

"CONSERVE OUR VITAL ENERGY RESOURCES"

SPECIFICATIONS & STANDARDS CORRECTIONS

--by *Directorate of Technical Operations*, *DFSC-T*

QAR's and other concerned personnel are requested to make the following changes and deletions in the May 1977 issue of DFSCH4120.1, Reference List of Specifications and Standards: The May issue has been distributed and the next revision won't be published for one year.

Page 4 - MIL-H-46170 and amend. 1, add; Fire Resistant to the title of specification and change qualification activity, A-FA to A-MRDC.

Page 6 - MIL-L-21260B, delete; Type II, grade 10 and grade 30 from the title of specification and Nato symbol C-642, and military symbol PE-10-2 and PE-30-2.

Page 6 - MIL-L-46000B, change qualification activity, A-FA-to A-PA

Page 6 - MIL-L-46150, change qualification activity A-RIA to A-PA

Page 10 - VV-F-800c to VV-F-800b

Page 11 - VV-L-800a, qualification activity A-RIA to A-PA

Page 16 - Fuel Oil Diesel, specification number from VV-F-800c to VV-F-800b.

Page 17 - Delete Grease, Aircraft MIL-G-46006 (MR) none.

Page 18 - Grease, Rifle MIL-G-46003A (WC) qualification activity A-RIA to A-PA.

Page 19 - Lubricant, semi-fluid (automatic weapons) MIL-L-46000B qualification activity A-FA to A-PA.

Page 19 - Lubricant, solid film air cured (corrosion inhibiting) MIL-L-46147 (MR) and amend. 1 qualification activity A-FA to A-MRDC.

Page 19 - Lubricant, Weapons, Semi-Fluid (High load carrying capacity) MIL-L-46150 qualification activity A-RIA to A-PA.

Page 20 - Delete Lubricating Oil, Gear Locomotive Traction Motor MIL-L-13914 (ORD) None.

Page 20 - Lubricating Oil, General Purpose, Preservative, (water-displacing, low temperature) VV-L-800a qualification activity A-RIA to A-PA.

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